

# Who Becomes an Inventor in Italy? The Role of Firms in Talent Discovery

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May 21, 2024

Draft Available Upon Request

## Abstract

This paper investigates the role of firms in discovering new inventors, that is, the employees who apply for a patent for the first time. Using employer-employee data from the Italian Social Security Institute matched with patent applications from 1987 to 2009, we identify more than one hundred thousand *potential* inventors, who either apply for a patent on the job or are predicted to ever invent based on observable characteristics. We find substantial heterogeneity in the discovery of new inventors across firms. Younger potential inventors are much less likely to apply for their first patents at a lower-wage firm. The gap between low-wage and high-wage firms in patenting disappears, however, among “established” inventors who have previous patent applications. Further, there is on average a 3 to 8 log-point increase in the annual wage when a worker files her first patent application. We interpret the empirical findings through a model where heterogeneous firms invest in talent discovery and use wage incentives to elicit effort from workers. When a firm’s investment and a worker’s effort are substitutable in innovation production, the model can explain why lower-wage firms set a higher return to patenting despite limited job mobility among inventors.

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\*We thank David Card, Claudia Goldin, Larry Katz, Pat Kline, and Na’ama Shenva for helpful discussions. Corresponding author: Alice Wu (haowen\_wu@g.harvard.edu).